



Staff Presentation on Staff Draft Electricity Demand Forecast Forms and Instructions

Prepared in Support of the
2005 Integrated Energy Policy Report
(2005 Energy Report)
Docket 04-IEP-01

September 20, 2004

Lynn Marshall
Demand Analysis Office



Role of CEC Demand Forecasts

Commission demand forecasts serve as a baseline for

- Resource adequacy assessment for the *Energy Report*
- Analysis of impacts of demand-side programs and policies, including energy efficiency, demand response, and renewables
- CPUC Procurement Proceeding
- Transmission planning – CAISO Annual Grid Planning process



Purpose of Requested Data

- For each LSE to document their own forecast. No specific forecast methodology is required.
- To support tracking and analysis of demand-side program impacts statewide
- To support staff forecast development, including disaggregation
 - Staff forecasting models operate at the planning area level. LSE-level forecasts are needed for analysis of reliability, renewables, energy efficiency, distributed generation, and transmission.



Overview of Demand Forecast Process

(Dates are approximate)

- Both staff and LSEs prepare forecasts (Jan 2005)
- Staff publishes Forecast Comparison Report (Feb 2005)
- Hearing on differences in demand forecasts (March 2005)
- Revised staff forecasts following Committee direction (April 2005)
- Hearings on revised forecast
- Commission approves forecast for *Energy Report* analysis
- Refresh of approved forecasts (new load data only) (Sept. 2005)
- Final adoption of forecasts (Fall 2005)



Demand Forms seek to answer the following questions about each LSE's load:

- What is the expected demand forecast from LSE's perspective?
- What electricity price, economic, and demographic assumptions drive the forecast? What methods were used to develop the forecast?
- What are the impacts of demand-side programs?
 - How do energy efficiency, demand response, and distributed generation affect expected demand?
 - What progress has been made toward EAP goals?
 - What further progress is expected?
- What are the key uncertainties?



Forecast Conventions

- Focus is on long run load forecasts at the LSE level. Data are to be submitted through 2015, but the adopted forecast will be for 2007-2015 only.
- Forecast should include “committed” energy efficiency, renewable, and nondispatchable demand response impacts.
 - Committed programs are those with approved funding and at least a preliminary program plan. For IOUs, 2006-2008 approved program plans are committed.
 - Uncommitted programs are those expected or scheduled, but not approved.
 - Impacts of dispatchable demand response programs are reported, but not included in the forecast.
 - Committed also includes the 2005 Building Standards.



Form 1 Electricity Demand

1.1 Retail Sales by Sector (all LSEs)

- Sector means the forecast sectors or customer classes used by the LSE
- To be reported separately for each distribution area.

1.2 Sales including departing load, by customer category (bundled, resale, DA, CCA, etc.) (UDCs only)

1.3 Net Energy for Load -Adds all energy losses, including UFE and T&D (UDCs only)

1.4 LSE (Bundled) Peak Demand by Sector

- Weather sensitive load for residential and commercial sectors will be used to improve weather adjustment and sensitivity of hourly load forecast.
- Add all losses on bundled load



Form 1 Electricity Demand, cont.

1.5 UDC area peak demand

- Adds direct access and other departed loads and losses to bundled load to obtain distribution area coincident peak

1.6 Hourly Loads – 8760 hours for 2003-2015 (all LSEs)

- Bundled and unbundled loads and losses are each reported separately.
- Staff will use for disaggregation and calibration of hourly forecast to LSE level, analysis of coincidence, and other analyses.



Form 1 Electricity Demand, cont.

1.7a and 1.7b Private supply forecast (UDCs only)

- Private supply includes self generation, customer side of the meter distributed generation, over the fence sales, and wheeling from a cogenerator to a final user.
- Reports annual energy and coincident peak (not capacity).

1.8 Peak Demand weather sensitivities (UDCs only)

- Forms 1.4 and 1.5 report peak demand under expected temperature conditions (referred to as 1-in-2, meaning a 50% probability of occurring).
- Form 1.8 adds peak demand under high temperature conditions with 1-in-5, 1-in-10, and 1-in-20 probabilities of occurring.



Form 2 Assumptions

- Should include all drivers used to develop the forecast.
- LSEs should modify forms as appropriate
- UDCs report economic and demographic drivers:
 - 2.1 State or National Economic and Demographic Assumptions
 - 2.2 Service area Economic and Demographic Assumptions
- All LSEs report:
 - 2.3a and 2.3b Electricity and natural gas price forecasts used for the forecast
 - 2.4 Customer counts, and any other drivers used to develop the forecast
- Document data sources and assumptions in Form 4.



Form 3 & 5 Demand-Side Programs

Report both committed and uncommitted impacts:

3.1 Efficiency Program First Year Costs and Impacts

3.2 Efficiency Program Cumulative Impacts (savings from current year program, plus decayed savings from previous years)

3.3 Renewable And Distributed Generation Program Costs and Impacts

3.4 Demand Response Program Costs and Impacts

Includes both traditional interruptible programs, and new price responsive demand programs or tariffs.

- Methodology, assumptions, and data sources are to be documented in the Form 5 Report
- Data for uncommitted programs may be reported later than committed (March 31, 2004)



Form 4 Forecast Methodology

- Modeling approach
- Definition of customer classes
- Documentation of Form 2 assumptions
- Explanation of losses
- Departed load assumptions
- Weather adjustment methods, and development of weather sensitivities
- Private supply forecast methods, assumptions, and data sources
- Calibration method



Form 6 Uncertainty

This a report on the key uncertainties facing each LSE, including

- Regulatory
- Programmatic
- Prices
- Other market conditions
- Each LSE should characterize those uncertainties it considers most significant for its own forecast
- Quantify expected effects
- No specific form is required, and analysis of a specific set of uncertainties is not required.